

DX10 TI Pascal Object Installation

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Preface

This manual gives instructions for installing TI Pascal (TIP). The installation procedure requires that you use DX10 System Command Interpreter commands. You can use the DX10 documentation to find information about commands and how to enter them from a terminal.

Before you install Pascal, read this manual to become familiar with the new installation options available to you. Also, read the DX10 TI Pascal Release Information (part number 2268524-9901).

This manual is written for new Pascal customers. If you are not a new customer and are updating to a new version of Pascal, read the Update Document (part number 2239939-9901) accompanying this software kit.

Questions?

The Texas Instruments customer support line (telephone (512) 250-7407) is available to answer your questions about installing and using TI Pascal. You must meet these conditions, however, before you can use the customer support line:

- * Texas Instruments supplied your software.
- * You did not modify your software.
- * You are a Texas Instruments software subscriber.

If you do not meet all these conditions, contact the supplier of your software.

We hope that you are pleased with your purchase. As you use TI Pascal, please take a moment to fill out a postage-paid User Response Sheet. User Response Sheets are the last pages in the TI Pascal Reference Manual and the TI Pascal Programmer's Guide. Use these sheets to suggest improvements to our product and our manuals. We try to incorporate our customers' comments into the next releases of our products.

Contents

Title	Page
Section 1 -- Introduction	1-1
Section 2 -- Preparing for Installation	2-1
Section 3 -- Installing the Object.	3-1
Section 4 -- Verifying the Installation	4-1

READ THIS DOCUMENT BEFORE ATTEMPTING TO USE THIS OBJECT KIT.
THIS DOCUMENT DESCRIBES THE 1.8.0 VERSION OF THE DX10 TI PASCAL
OBJECT INSTALLATION MEDIA, PART NUMBERS 2276496-1601, -1604,
-1605, OR -1606.

TEXAS INSTRUMENTS ASSUMES NO RESPONSIBILITY FOR MODIFICATIONS
MADE TO THIS OBJECT KIT.

Section 1

Introduction

1.1 GENERAL INFORMATION

Be sure to copy or write protect the installation media. For copy procedures, refer to the DX10 Operating System Operations Guide, Volume II, part number 946250-9702.

Some System Command Interpreter (SCI) commands in this document are given in abbreviated form and may be executed by entering the command exactly as is, or by using the interactive prompting from the SCI. For a discussion of the abbreviated command form refer to the DX10 Operations Guide, Volume II.

1.2 MEDIA DEFINITION

Product shipments of TI Pascal (TIP) are made in three formats:

- * Disk -- A disk pack or three double-sided, double-density diskettes that contain the object.
- * Magnetic Tape -- A magnetic tape reel that contains the object.
- * Add-On -- A disk pack that contains the object and one or more other products on the same disk pack.

The installation instructions in this document assume that the object files are accessible by a synonym. Section 2 describes how to prepare the media so that the files can be accessed by a synonym.

1.3 THE INSTALLATION PROCEDURE

The object media contains the files, batch streams, and SCI commands to perform the following:

- * Install the object files
- * Verify the installation

1.4 SYSTEM REQUIREMENTS

To successfully perform this installation procedure, you must have a functioning DX10 3.X system.

Section 2

Preparing for Installation

2.1 INTRODUCTION

Before executing the installation procedure, the object files must be prepared so that the installation command can access them. The following paragraphs describe how to prepare each type of media.

2.2 DISK FORMAT

If you receive the Pascal object either on a single disk or on multiple diskettes, you must prepare either type of media, as described in the following paragraphs.

2.2.1 Single Disk

1. Load the installation disk in an available disk drive.
2. Install the disk by issuing the following command:

IV U=DSxx, V=DXPASCAL

In this command, DSxx is the disk drive on which DXPASCAL is loaded.

Now proceed to Section 3 for instructions for installing the object.

2.2.2 Multiple Diskettes

1. Load the first installation diskette, volume name DXPASCA1, in an available diskette drive on a functioning DX10 3.X system.

2. Install the diskette by issuing the following command:

```
IV U=DSxx, V=DXPASCA1
```

In the IV command, DSxx is the disk drive on which DXPASCA1 is loaded.

Now proceed to Section 3 for instructions for installing the object.

2.3 MAGNETIC TAPE FORMAT

If you receive the object on a magnetic tape, you must first move the files to a disk before beginning the installation process. To accomplish this task, perform the following steps:

1. Create a directory on a disk by issuing the following command:

```
CFDIR P=volname.DXPASCAL, M=20
```

In this command, volname is the name of the disk on which the directory is created.

2. Load the magnetic tape on an available tape drive.
3. Move the contents of the magnetic tape to the directory you created by issuing the following command:

```
RD S=MTxx, D=volname.DXPASCAL, L=.LISTING,
```

In this command, volname is the name of the disk that receives the restored directory. The file .LISTING now contains a listing of the directory restored from the magnetic tape. You can examine this file by executing a Show File (SF) or a Print File (PF) command.

4. Unload the tape.
5. Assign the synonym DXPASCAL to the pathname of the restored directory by issuing the following command:

```
AS S=DXPASCAL, V=volname.DXPASCAL
```

In this command, volname is the volume name of the disk that receives the restored directory.

Now proceed to Section 3 for instructions for installing the object.

2.4 ADD-ON FORMAT

If you receive the object as an add-on package, use the following steps to prepare it for installation.

1. Load the disk containing the add-on package in an available disk drive.
2. Install the disk by issuing the following command:

```
IV U=DSxx, V=volname
```

In this command, DSxx is the disk drive on which the volume is loaded and volname is the volume name of the add-on disk. The volume name is marked on the disk or you can execute a Show Volume Status (SVS) command to obtain the volume name.

3. Assign the synonym DXPASCAL to the Pascal object directory by issuing the following command:

```
AS S=DXPASCAL, V=volname.DXPASCAL
```

Now proceed to Section 3 for instructions for installing the object.

Section 3

Installing the Object

3.1 INTRODUCTION

The TI Pascal object media contains both the object files and the batch stream necessary to install Pascal on a DX10 3.X system. Before you install Pascal, you need to consider Pascal's disk space requirements. Pascal requires a certain amount of disk space for installation.

A disk requires about 2000K bytes of space to hold the entire Pascal package. Use an SVS command to find the amount of space available on your system disk. Multiply the value of BYTES/ADU by the value of AVAILABLE (available ADUs) to estimate the number of bytes available on the disk.

To hold the Pascal compiler, a disk requires about 900K bytes of space (1K equals 1024).

Pascal can be installed using any of the following three configurations. The configuration you use depends on the amount of space available on the system disk.

- * If 2000K bytes are available on the system disk, you can install the entire Pascal package on the system disk.
- * If 2000K bytes are not available on the system disk, but at least 900K bytes are available, you can install the compiler on the system disk and leave the run-time support on the installation disk or put it on a secondary disk.
- * If less than 900K bytes are available on the system disk, you must leave the entire package on the installation disk or install the package on a secondary disk.

You can choose which of these configurations to use by responding to the appropriate installation command prompts, as discussed in the following paragraphs.

3.2 INSTALLING PASCAL

The following instructions describe how to install Pascal on the system disk or a secondary disk. They also tell how to install Pascal and leave the compiler or run time on the installation disk. The installation process performs the following:

- * Automatically deletes any previously installed version of Pascal.
- * Installs the Pascal compiler, error message files, run-time support library, support utilities, and SCI procedures.
- * Generates an output file that you can examine to ensure that Pascal is properly installed.

3.2.1 Installation Procedure

To install Pascal, perform the following steps:

1. When you use a secondary disk to hold the compiler or run time, load the disk in an available drive and install it by issuing the following command:

IV U=DSxx, V=volname

In this command, DSxx is the disk drive in which the secondary disk is loaded, and volname is the volume name of the secondary disk.

2. Access the installation command procedures library by issuing the .USE primitive, as follows:

- a. If you receive the object on a single disk or a tape, issue the .USE primitive as follows:

.USE DXPASCAL, .S\$PROC

- b. Otherwise, if you received the object on diskettes, enter the .USE primitive as follows:

.USE DXPASCA1, .S\$PROC

The following menu should appear:

```

DX10 TI PASCAL 1.8.0. INSTALLATION

INSTALL - INSTALL TI PASCAL
VERIFY - VERIFY THE INSTALLATION

```

The installation library contains two SCI commands, one to install Pascal (INSTALL) and one to verify the installation (VERIFY).

3. Install Pascal by entering the INSTALL command and answering the prompts, as follows:

```
[ ]INSTALL
```

```

INSTALL TI PASCAL <VERSION 1.8.0 YYDDD>
  COMPILER TARGET VOLUME: volname
  RUN TIME TARGET VOLUME: volname
    SYSTEM DISK: volname
SUPPORT FIXED AND DECIMAL?: {YES/NO}      (YES)
INSTALLATION BATCH LISTING: pathname      (.LISTING)
INSTALLING FROM DISKETTES?: {YES/NO}      (YES)

```

COMPILER TARGET VOLUME

Enter the name of the disk volume where you want to install the Pascal compiler program file. If you press the Return key without entering anything (null response), the installation procedure installs the compiler on the system disk. Enter DUMMY if you wish to leave the compiler on the installation disk.

RUN TIME TARGET VOLUME

Enter the name of the disk where you want to install the Pascal run-time support libraries. If you enter the null response, the installation procedure installs the run-time object files on the system disk. Enter DUMMY if you wish to leave the run time on the installation disk.

SYSTEM DISK

Enter the name of the system disk that will be installed when you execute the Pascal compiler. The installation procedure installs the compilers SCI procedures and error message files on this disk. If you wish to use the current system disk, enter the null response.

SUPPORT FIXED AND DECIMAL?

At your option, you can install support for FIXED and DECIMAL arithmetic. Enter YES to merge the FIXED and DECIMAL support with the rest of the run-time object library (on the run-time target volume). If you do not require FIXED or DECIMAL support, enter NO to leave these object modules on the installation disk.

INSTALLATION BATCH LISTING

Enter the name of the file where you want to send the installation batch stream listing.

INSTALLING FROM DISKETTES?

If you receive the Pascal object on diskettes, enter YES. Otherwise, enter NO. If you enter YES, the following prompt will appear:

INSTALL TI PASCAL FROM MULTIPLE DISKETTES
WHICH DISKETTE (1,2,3)? : integer

In response to the prompt, enter the number of the diskette that you installed. DXPASCA1 is 1, DXPASCA2 is 2, and DXPASCA3 is 3.

After you respond to the prompts, the INSTALL command executes the installation batch stream. A message appears, indicating that the installation is in progress. Installation normally takes about thirty minutes. During this time, you may wish to check the status of the installation batch stream for completion and proper execution. Execute the SCI command Show Background Status (SBS) or Wait (WAIT) to have SCI notify you when the batch stream completes, or enter the Show File (SF) command to examine the file whose name you entered in response to the INSTALLATION BATCH LISTING prompt.

When the installation batch stream finishes, this message appears on the console:

TIP INSTALLATION COMPLETED WITH n ERRORS

If there are errors in the batch execution, examine the batch listing to determine the error. The following error codes are normal and should be ignored.

- * 0026 error in a Create Directory File (CFDIR) command.
- * 0027 error in a Delete Directory (DD) command.
- * 0021 error in a Modify File Protection (MFP) command.
- * 0027 error in a Modify File Protection (MFP) command.
- * 0001 error in a Release Global LUNO (RGL) command.

If you are installing Pascal from diskettes, issue the .USE primitive to return to the default DX10 menu, as follows:

.USE

Unload DXPASCA1 and load the second diskette, DXPASCA2 (refer to paragraph 2.2.2 for instructions on how to load and install diskettes). Access the installation command procedures by issuing the .USE primitive, as follows:

.USE DXPASCA2, .S\$PROC

Execute the INSTALL command again, this time answering YES to the INSTALLING FROM DISKETTES prompt and 2 to the WHICH DISKETTE (1,2,3)? prompt. When the installation batch stream finishes, issue the .USE primitive to return to the main DX10 menu, as follows:

.USE

Unload DXPASCA2. Repeat the loading and installation process again for the third diskette, DXPASCA3.

3.2.2 Global LUNO 021

You need to assign global LUNO >21 to the Pascal program file. You must assign this LUNO each time you use Pascal, or you can have it assigned during the log-on procedure. To have the log-on procedure assign the LUNO automatically, edit the Initialize System command procedure and insert the following lines:

```
AGL L=>21,AN=.TIP.PROGRAM,P=YES
MLP P=P,L=>21
```

If global LUNO >21 is already being used for some dedicated purpose, you must change the Pascal procedures to use another LUNO. To change the global LUNO used by Pascal, edit the installation files DXPASCAL.PROCS, DXPASCAL.INSTALL, DXPASCAL.TIP.TIPBATXS, DXPASCAL.TIP.TIPBATXT, and DXPASCAL.TIP.TIPBATXL to replace all occurrences of the string >21 or 021 with an available LUNO. After you edit the files, you can install Pascal.

The following components of the Pascal object are installed on the target disks during installation:

Run-time object libraries:

RTLVOL.TIP.	
LUNOBJ	Alternate versions for use without SCI
MINOBJ	Minimal run-time
OBJ	Standard run-time
MISC	VDT and KIF routines

Miscellaneous files:

SYSVOL.TIP.CFGERR	Error messages for configuration processor
SYSVOL.TIP.ERRORS	Error messages for compiler
CMPVOL.TIP.TIPBATXL	Control stream for background XTipl procedure
CMPVOL.TIP.TIPBATXS	Control stream for background XSILT procedure
CMPVOL.TIP.TIPBATXT	Control stream for background XTIP procedure

Program file tasks in CMPVOL.TIP.PROGRAM

<u>ID</u>	<u>Name</u>	<u>Description</u>
01	SILT1	Parser -- First pass of compiler
02	SILT2	Semantic processor -- Second pass of compiler
03	CODEGEN	Code generator -- Fourth pass of compiler
04	CONFIG	Configuration processor
05	NESTER	Source program reformatting utility
06	SPLITOBJ	Object module split utility
07	RASS	Reverse assembler
09	SPLITPGM	Source module split utility
0B	P\$DELETE	Delete temporary files
0D	T9OPT	Optimizer -- Third pass of compiler
0E	EXTRACT	Assembly language extractor
0F	PSCLXREF	Cross-reference utility
12	PREPROC	Preprocessor utility

SCI procedures:
 SYSVOL.S\$PROC.

M\$TIP	Menu
MODE\$\$	Select Execution Mode
P\$DELETE	Delete temporary files
P\$INIT	Initialize temporary file directory
P\$SYN	Delete synonyms
SPID	Show Pascal version ID
TIP\$MSG	Display message file on screen
XALX	Execute assembly language extractor
XCODE	Execute code generator
XCONFIG	Execute configuration processor
XCONFIGI	Execute configuration processor interactively
XNESTER	Execute source reformatter utility
XP\$2	Process options for preprocessor and compiler
XPP	Execute preprocessor
XPT	Execute a Pascal task
XPX	Execute cross-reference utility
XR\$1	Test option parameter for foreground option
XRASS	Execute reverse assembler
XSILT	Execute syntax check portion of compiler
XSPLIT	Execute object split utility
XSPLITPG	Execute source program split utility
XTIP	Execute compiler
XTIPL	Execute compiler and link editor

If you wish to delete the installed components from your system, use the MFP, Delete File (DF), DD, DT, or Delete Procedure (DP) commands, as appropriate, to remove the components listed in the preceding.

If you wish to verify that the installation was successful, proceed to Section 4 for instructions on how to execute the VERIFY command.

Otherwise, return to the default command menu by entering the .USE primitive:

.USE

If you received the Pascal object on a disk, and you did not leave the compiler or the run time on the installation disk, unload the disk by issuing this command:

UV VOLUME NAME=volname

In the UV command, volname is the name of the object installation disk (DXPASCAL a single disk, or DXPASCA3 for a diskette).

Section 4

Verifying the Installation

The Pascal installation disk provides a command you can use to test whether the Pascal object files are properly installed. The command executes a batch stream that performs the following:

- * Compiles a test Pascal program
- * Exercises the nester, split program, configuration processor, reverse assembler, assembly language extractor, and split object utilities.
- * Link edits the test program
- * Executes the test program

NOTE

This test assumes that the Pascal SCI procedures are installed on the current system disk. Therefore, this test cannot execute if you named a secondary disk as the system disk when you installed Pascal.

1. To test Pascal, execute the VERIFY SCI command, as follows:

```
[ ]VERIFY
```

```
VERIFY TI PASCAL INSTALLATION
```

```
    OUTPUT FILE DIRECTORY: pathname
```

```
    BATCH STREAM LISTING: pathname    (.LISTING)
```

```
    INSTALLING FROM DISKETTES?: {YES/NO}    (YES)
```

Respond to the prompts as follows:

OUTPUT FILE DIRECTORY

Enter the name of the directory that is to hold the files and the listings that the test program uses. If you create the directory, allow 30 entries. If you do not create the directory, the VERIFY command creates it for you.

BATCH STREAM LISTING

Enter the pathname of the file that is to hold the batch stream listings.

INSTALLING FROM DISKETTES?

If you received the Pascal object on diskettes, enter YES. Otherwise, enter NO. If you enter YES, make sure that the diskette named DXPASCA3 is installed.

2. After you enter the command, the following message appears:

BEGIN TI PASCAL VERIFICATION TEST

3. The test batch stream executes for about 10 minutes. You can use the SBS or WAIT commands to have SCI notify you when the tests complete. Also, you can use the SF command to inspect the file whose name you entered in response to the BATCH STREAM LISTING prompt of the VERIFY command.
4. When the test completes, a message appears, indicating whether the tests were successful. If the tests fail, check the file whose name you mentioned in response to the BATCH STREAM LISTING prompt to determine the cause of the failure.
5. Return to the default command procedure library by issuing the .USE primitive:

.USE

6. If you received the object files on a disk, and you did not leave the compiler or run time on the disk, you can unload the volume by issuing the UV command:

UV VOLUME NAME=volname

In the UV command, volname is the name of the installation disk (DXPASCAL if you received the object on a single disk, or DXPASCA3 if you received the object on diskettes).